SOCIAL MEDIA TECHNOLOGIES AND HIGHER EDUCATION: EXAMINING ITS USAGE AND PENETRATION LEVEL AS EDUCATIONAL AIDS IN INDIA

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Abstract: Social media platforms have become an indispensable part of people's lives in the digital era. Correspondingly, the educational spectrum is also foreseen to experience various pedagogical transformations owing to the continuous rise in the usage of web 2.0 tools across the globe. The expanding thesaurus of social media applications (Social Networking, blogs, wikis, hashtagging, etc.) is observed to aid the growth of several informal pedagogical channels that can foster the development of networked, collaborative and constructive virtual learning environments.

In order to gain a better understanding regarding the educational value of the web 2.0 technologies, the present study aimed to identify the reception and usage of various social media platforms in the educational context. It proposed to analyze the extent to which social media channels are being utilized for the purpose of knowledge sharing, knowledge creation and knowledge acquisition. An extensive survey was conducted among the faculty members of Tamil Nadu in India - a state known for its high academic output.

The study showcased that the penetration level of social media platforms among the higher educational institutions in Tamil Nadu is still in its infancy. Though a large number of faculty members are currently employing these platforms for gathering and sharing educational information and resources, only a very few were contributing new learning resources/content back to these platforms.But even in its infancy, the growing adoption of the social web by faculty members has initiated a revolution in the contemporary educational landscape thereby providing more enhanced learning experiences for the students.

Keywords: Social Media; Higher Education; Faculty Usage; Knowledge Sharing; Knowledge Creation; Knowledge Acquisition.

INTRODUCTION

Information and Communication Technology (ICT) and Social Media platforms are identified as the two core necessities of the millennials in the present era (Committee of Inquiry, 2009). The explosive growth in the popularity of the social web (Lenhart, Pureett, Smith and Zickuhr, 2010) has been marked as one of the principal phenomena of the Digital Age. According to the 'Digital in 2016' report – a report containing statistical insights from the extensive data collected from various countries across the globe - there are currently 2.3 billion active social media users (We are Social, 2016). India is observed to be the third largest Internet users' base - 317 million - in the world next to China and the United States of America (IAMAI, 2015). Moreover, India has over 143 million social media users (IAMAI, 2015) of which 136 million falls under the active user category (Internet World Stats, 2016). This enormous proliferation of social media platforms has influenced and transformed many major sectors (Governance, Commerce, etc) in the country including education.

Computers influencing the conventional educational systems were foreseen by educational researchers as late as the 1990s. For instance, Tapscott (1998) claimed that students of the Net Generation will be entering their classrooms expecting to be exposed to a Technology Enhanced Learning (TEL) environment. As predicted by various educational researchers, several studies (Mazer et al, 2007; Paul et al 2012; Dyson et al, 2015) have shown that social media outlets have penetrated and are continuously renovating the modern educational landscape into a more networked, collaborative and constructive one.

SOCIAL MEDIA AND LEARNING

Though initially developed for communication purposes, social software such as social networking sites, wikis, blogging or microblogging sites and media sharing sites tends to hold huge educational value (Tess, 2013; Gao, Luo and Zhang 2012; Manca and Rameri, 2013). Liburd and Christensen (2013) stated that social media outlets allow learners to engage themselves in an active, collaborative and in-depth learning process. Studies (Lundin, 2008; Miyazoe and Anderson, 2010; Robertson, 2011) have shown that social publishing sites which support User Generated Content (UGC) act as interactive virtual environments ideal for networked and social learning practices(Hajli and Lin, 2014). Students are observed to have a positive and an enhanced learning experience when interactive blogs or microblogs were included in their academic functions as it encouraged active participation and expansion of learning resources (Gao et al, 2012). Similar to blogs, wikis can assist in collaborative knowledge creation process, a feature that can be used by the teachers and students to keep a continuous track on their work (Parker and Chao, 2007).

McCarthy (2010) advocated that Facebook serves as an ideal platform for hosting learning programs, especially blended learning programs. YouTube is yet another popular social media outlet that has been experimented with its educational potential. The rich visual content present in YouTube was observed to be effective in learning activities or for learning complex subjects such as the human anatomy (Jaffer, 2012). In Addition to enhancing learning experiences, Social media tools also aid in combating students' anxiety issues that might occur while raising doubts or question in real-life classroom settings (Wheeler et al, 2008).

SOCIAL MEDIA AND HIGHER EDUCATION

The millennial generation is currently witnessing a continuous increase in the research dealing with the applications of social media tools in varied higher educational settings (Dyson, Vickers, Turtle and Cowan, 2015; Davis et al 2012; Tess 2013). Embedding social media technologies within an academic setup has been primarily associated with social-cultural learning theories (Liburd and Christensen, 2013). According to Hung and Yuen (2010), social networking sites such as Facebook or Twitter can act as aids in supplementing conventional classroom lectures. These social tools were identified to enhance the overall students' learning experiences. In addition, the use of social media platforms in colleges for educational purposes has been perceived to increase the students' satisfaction and participation level (Hamid et al, 2015) and also decrease the anxiety levels of the students within the conventional classroom environments (Wheeler et al 2008).

While studies focusing on the student's perspective of social media use for educational activities are found in abundance, studies concentrating on the teachers' or faculty members' perception regarding the pedagogical application of social media tools are less in number and are rare to be found. According to Moran et al (2012), faculty members are generally very cautious and choosy regarding their online social identity and presence. Facebook was identified as the most popular social media channel among higher education faculty members, especially to keep in touch with their personal connections and to get updates. In the case of professional identity management, LinkedIn was the most opted social media outlet. Blogs and wikis were preferred by them for engaging themselves in teaching and educational activities. Though faculty members tend to hold a positive attitude towards the pedagogical applications of the social web, the socially constructed image/opinion regarding social media platforms as 'entertainment outlets' serves as the primary obstruction in using these technologies within classroom environments. Secondary factors of obstruction include the fear of distraction (Philips, 2011), privacy (Rambe, 2013), and credibility issues.

The present study aims to analyze the reception and penetration of social media technologies within the Indian higher education classrooms. Also, the study indents to examine the faculty members' opinion in employing the social web an instructional/educational aid.

METHODOLOGY

An extensive survey was conducted among the faculty members belonging to the state of Tamil Nadu for the current study. Tamil Nadu – one among the eight Indian states having the largest number of higher education institutions - was chosen as the research area. A three-stage random sampling design (Multistage sampling) was employed to identify representative samples for the study. Initially, all the 32 districts of Tamil Nadu were categorized in four

zones - North, South, Central and West – and five districts from each zone were selected at random. Secondly, a list was developed compiling the details of all the institutions belonging to the district that have been selected and five colleges from each selected district were included for the study. Finally, for each selected institution, a database was created accumulating information regarding all the faculty members affiliated with it and random number generator was used to select the samples (faculty members) that are to be included for the study. In this fashion, a total of 1000 samples were approached for the survey from which 725 valid responses were collected.
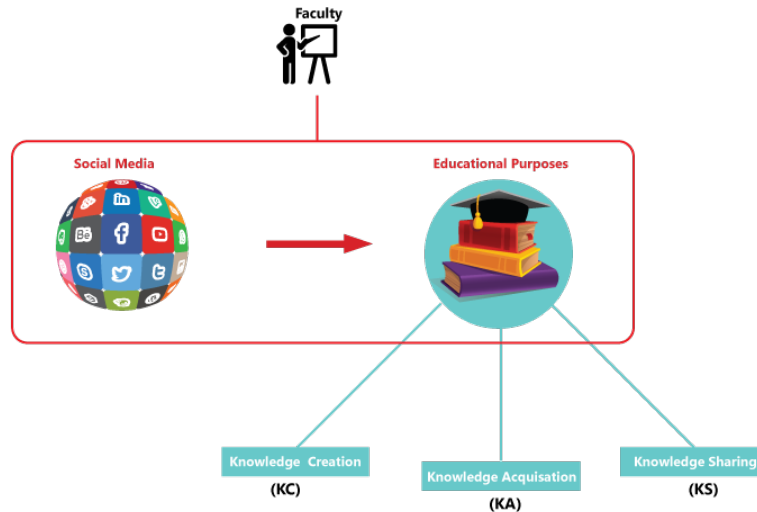
**Figure 1. The framework of the present Study**

Recently the developments in the global economy has been emphasizing the importance of Knowledge Management in both the academic and the business sector (Jaleel and Verghis, 2015). The emergence of the social web has modified the conventional educational process into more knowledge and information oriented one. Hence it is crucial to use knowledge-based constructs to analyze the reception and usage of social media platforms in an academic perspective. Knowledge Creation (KC – creating new educational content by posting/publishing one's understanding, viewpoint, information, opinions or questions), Knowledge Acquisition (KA - acquiring new skills, information or understanding) and Knowledge Sharing (KS – sharing information and learning resources using online social platforms) were the three main constructs that were used to design the research instrument (Figure 1). The reliability and the internal consistency of the items (questions) used to measure the constructs were assessed using Cronbach's alpha coefficient. The questionnaires had an alpha value of .76 relatively high to the accepted reliability value of .70 (George & Mallery, 2003).

ANALYSIS AND INTERPRETATIONS

The faculty members who responded to the survey questionnaire contained 55% of male respondents and 45% of female respondents. Based on their academic titles, the respondents consisted of 71% of Assistant Professors, 15% of Associate Professors, 10 % of Professors and the rest were visiting faculty, lecturers and teaching assistants. Other than a few, most of them were active internet users - 63.5% claimed that they browsed the web and used online social applications more than five times a day. Almost 50% of the respondents stated that they regularly accessed the web in their workplace (colleges) during their break time or free hours. Facebook (61.5%) was the top social media platform used by the faculty members in the major higher educational institutions in Tamil Nadu. Next, to Facebook, Google Scholar (55.8%), LinkedIn (50%), Google+ (48%) and YouTube (40.4%) were the popular social media choices of the respondents. Almost 77.3% of faculty members were unaware of Stack Exchange (a collaboratively editable question and answer site focusing on various educational streams), and 63.6% were not aware of the existence of Quora (a question and answer site where questions including educational questions are posted, answered, edited and organized by its users).

KNOWLEDGE ACQUISITION

Knowledge acquisition is operationally defined as the process of acquiring and adding new information to the existing knowledge for refinement or enhancement (McNamara and O'Reilly 2002).
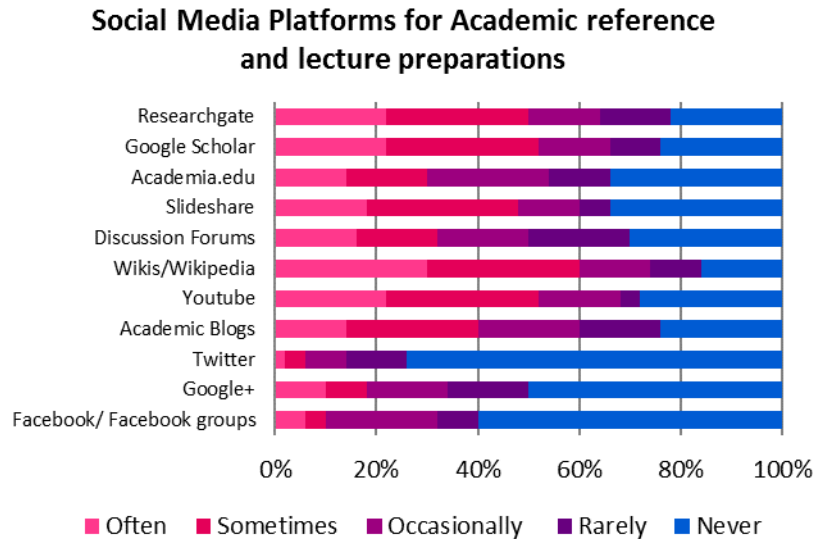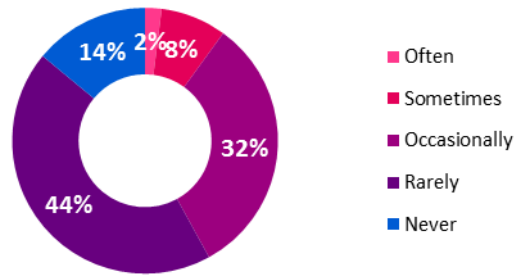

Figure 2. Faculty using Social Media Platforms for Academic reference and lecture preparations

On an average measure, 88% (18% - often, 48% - sometimes and 22% - occasionally) of the faculty members stated that they acquire new information (with educational value) through social media platforms (in addition to other conventional information sources). Only 4% responded that they never used these platforms for acquiring knowledge. Almost 78.9 % (13.5% - often, 25% - sometimes and 40.4% - occasionally) of the respondents have found the information posted on social media platforms to be 'usefulness' for their lecture preparations. 25.5% of the faculty claim that they always search social media outlets for content/information to further enhance their understanding regarding a particular topic. Based on the functionality, Wikipedia/ Wikis (30%), ResearchGate (22%), Google Scholar (22%) and YouTube (22%) are the top sites that are often used by the faculty members for lecture preparations and for referring educational content (Figure 2).

KNOWLEDGE CREATION

According to Communal constructivist approach (Holmes et al, 2001), learners not only learn actively by constructing new knowledge (Constructivism) as a result of their online interactions and connections (Social Constructivism) but they also collaboratively create knowledge for their learning community. Based on Communal Constructivism theory, knowledge creation for the present study can be defined as an act of creating and posting/publishing/adding any new educational content (User Generated Content) in online social platforms for the benefit and reference of others - an online network of learners/friends/followers or Subscribers.
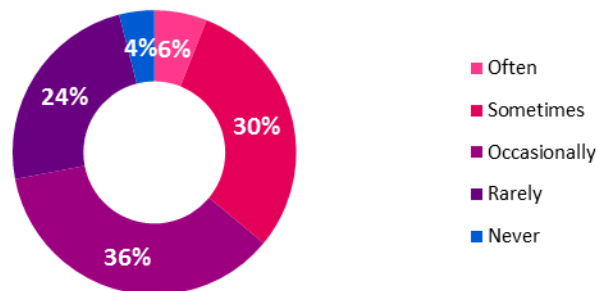
Figure 3. Faculty using Social Media Platforms for Knowledge Creation (KC)

Based on the knowledge Creation construct measure, only 2% of the faculty members from higher educational institutions in Tamil Nadu showed high interest in posting their own educational resources/content online (Figure 3). Though almost 74.5% of the respondents claimed that they have never faced any copyright issues while posting their educational content online or while using online learning resources; only 1.9% claimed that they were regular and active in social publishing sites such as online academic discussion forums, question and answer sites, academic blogs etc. Synonymous attitude prevailed in encouraging students to post their content/opinion/ questions online. Only 3.8% of the respondents supported such activities among their students. Almost 36.5% of the faculty surveyed were unaware that they could contribute content to Wikipedia or academic wiki pages. Only 4% of the respondents stated that they actively publish their learning resources in wiki platforms. It is also important to note that only 7.7 % of faculty members encouraged regular online interactions (such as subject related discussions or clearing doubts etc.) with their students through social media platforms.

KNOWLEDGE SHARING

According to Bukowitz et al (1999), Knowledge sharing is represented by any activity through which existing knowledge (such as information, skills, or expertise) is exchanged among people (such as friends, families or acquaintance) or communities or organizations. Derived from the above definition, Knowledge Sharing for this study is operationally defined as an act of sharing existing information (via links or text or multimedia content) through one's social media profile/page in order to expose the information to others present in their online network of learners/friends/followers or subscribers.

Figure 4. Faculty using Social Media Platforms for Knowledge Sharing (KS)

From the above pie chart, it can be inferred that around 72% of the respondents (6% - Often, 30% - Sometimes and 36% - Occasionally) share learning resources through social media outlets. 33% of the faculty members surveyed were not comfortable in openly sharing educational content online (Figure 4), but almost 66% were willing to share

them in online private settings such as groups or through private messages. Similarly, only 7.7% of the faculty members encouraged their students to read and refer educational resources posted on social media platforms.

RELATIONSHIP BETWEEN KNOWLEDGE ACQUISITION, KNOWLEDGE CREATION AND KNOWLEDGE SHARING

Correlation Analysis was conducted to identify the relationship between the three major constructs analyzed in the current study. According to Table 1, it can be inferred that all the three constructs – Knowledge Creation, Knowledge Acquisition and Knowledge Sharing have a significant correlation with one another but the intensity of the relationship varied.

Table 1. Correlation table of Knowledge Creation, Knowledge Acquisition and Knowledge Sharing

	Pearson Correlations		
	Knowledge Creation	Knowledge Acquisition	Knowledge Sharing
Knowledge Creation	1	.579[**]	.829[**]
Knowledge Acquisition	.579[**]	1	.705[**]
Knowledge Sharing	.829[**]	.705[**]	1

**. Correlation is significant at the 0.01 level (2-tailed)

The Correlation table (Table 1) indicates that the strength of linear association between Knowledge Creation and Knowledge Sharing is very high with an 'r value' of 0.829. Additionally, simple regression analyses were conducted to further analyze the dependence and relationship between three constructs examined in the present study. According to regression table below (Table 2), it is evident that 68.1% (adjusted R^2 value) of the variations that occur in Knowledge Creation can be attributed to the Knowledge Sharing behavior of the faculty members. Also, 48.6% (adjusted R^2 value) of the variations that occur in Knowledge sharing can be linked with the Knowledge acquiring behavior of the faculty members.

**Table 2. Regression Analysis of the constructs**

Constructs examined	R^2 (adjusted R^2)	β value (t-scores)
Knowledge Sharing → Knowledge Creation	.688(.681)	.829 (10.278)***
Knowledge Sharing → Knowledge Acquisition	.497(.486)	.705 (6.882)***
Knowledge Acquisition → Knowledge Creation	.335(.321)	.557(4.918) ***

SOCIAL MEDIA PLATFORMS AS A LEARNING TOOL

The respondents were asked to rate popular social media platforms on a five-point Likert scale based on their potential of being employed as learning aid. Almost 52% of the faculty gave a high rating to Google Scholar for having the potential to be used as a learning tool (Figure 5). ResearchGate (46%) was the second highest rated

platform. Wikipedia (36%) and YouTube (36%) were valued next to ResearchGate, while Twitter was rated the least (10%) in possessing the ability to function as a learning tool.
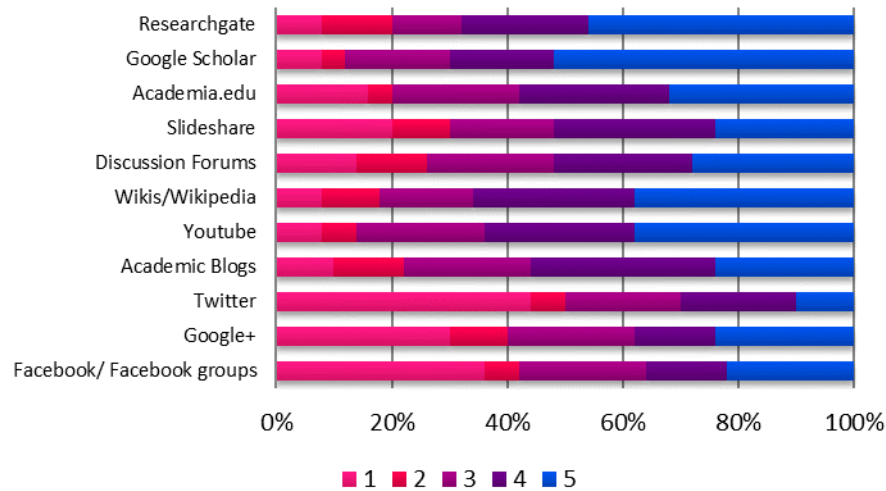
Figure 5. Faculty's rating based on the potential of social media platforms to be used as a learning tool

SOCIAL MEDIA FUNCTIONALITIES ESSENTIAL FOR EDUCATIONAL ACTIVITIES

Simth (2007) developed the honeycomb framework which constituted the seven key building blocks of social software - Identity, Presence, Relationship, Conversations, Groups, Reputation and Sharing. These blocks are neither mutually exclusive nor do they all have to present for the efficient functioning of a particular social media platform. According to the framework, Identity denotes the virtual appearance of a user present in the social web (such as profile names, profile photos or 3D avatars); Presence indicates the accessibility of a user within the online social environment (Example: Online/Offline status); Conversation signifies any communication process that can occur between the users within the social web (including features such as private messaging, chatting, commenting, etc.); Relationship represent the connections between the users; Reputation showcases the credibility or trustworthiness of a user or content present online (such as number of subscribers or followers); Groups represent the functionality that enables the users to form online communities and finally, Sharing symbolizes any act of user-generated content being published/posted/shared on the social web. Based on the purpose and theme of the social media platform the importance given to the seven blocks may differ. For instance, according to Kietzmann et al (2011) sharing was the primary block focused on YouTube whereas Identity, Reputation and relationship were the primary blocks concentrated in LinkedIn.
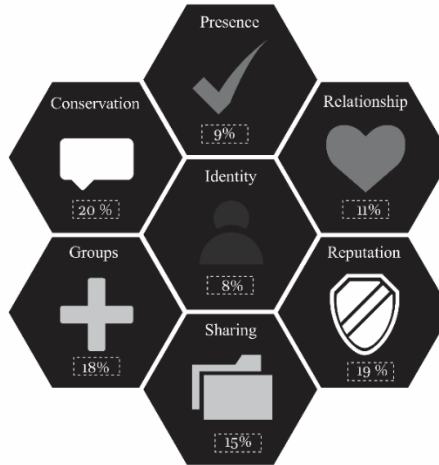
Figure 6. Honeycomb framework of social software for an academic social media platform

Similarly, for the present study, responses were collected to identify the core functionalities needed to be incorporated into an educational social media platform. The above figure (Figure 6) denotes the nature of Gene Smith's honeycomb framework after inputting the faculty members' requirements and preferences. According to faculty surveyed, Reputation tends to hold prime importance for any social platform built for instructional/academic purposes. Conversation, Sharing and Groups can be categorized as the secondary blocks of importance next to Reputation. While Identity and Presence tend to have the least significance in an academic social media platform.

CONCLUSION

The present study provides an overview regarding the reception and usage of the social media among the academic staff members for educational purposes. It is evident from the study that the penetration and reception of social media platforms in the higher educational institutions in Tamil Nadu are still in its infancy. Though a large number of faculty members are currently employing social media tools for gathering and sharing educational information and resources, only a very few were contributing resources back to these platforms. Even in its infancy, social media platforms are observed to renovate the contemporary educational landscape as the faculty members are actively adopting modern social tools for enhancing the learning experiences of their students. Knowledge Sharing and Reputation (Credibility) were the main factors that were emphasized as the primary requirements in an academic social media platform. Overall, the faculty members showed a positive attitude towards the educational use of social media platforms. But the lack of awareness regarding the true educational potential of the social web noted among a section of the faculty can act as a barrier in influencing the usage of social media platforms in academic settings.

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